

ABSTRACT

Two rotary mechanism parts (70, 80) are provided in a rotary expander (60). The first rotary mechanism part (70) is smaller in displacement volume than the second rotary mechanism part (80). A first low-pressure chamber (74) of the first rotary mechanism part (70) and a second high-pressure chamber (83) of the second rotary mechanism part (80) are fluidly connected together by a communicating passageway (64), thereby forming a single expansion chamber (66). High-pressure refrigerant introduced into the first rotary mechanism part (70) expands in the expansion chamber (66). An injection passageway (37) is fluidly connected to the communicating passageway (64). When an motor-operated valve (90) is placed in the open state, high-pressure refrigerant is introduced into the expansion chamber (66) also from the injection passageway (37). This makes it possible to inhibit the drop in power recovery efficiency, even in the condition that causes the actual expansion ratio to fall below the design expansion ratio.